BAR awards 47 winners in the 16th NRS

Winners in this year’s national research symposium were recognized and awarded with trophies, plaques, and cash prizes during the awarding ceremonies held at the Convention Hall of the Bureau of Soils and Water Management (BSWM) on 05 October 2004. Honorable Benasing Macarambon, chair of the Committee on Agriculture, Food, and Fisheries of the House of Representatives, BAR Director William Medrano, and Assistant Director Nicomedes Eleazar, and former BAR Director Eliseo R. Ponce presented the awards.

Winning the AFMA R&D Paper Awards were 35 unpublished papers that garnered a rating of 80% and above during the initial evaluation. This year, BAR reported an enthusiastic turnout of participants, with 153 unpublished papers, equivalent to a significant 61% increase over that of last year’s.

From the AFMA R&D Paper awardees, the top three finalists for basic, applied, and adaptive categories instantly became the winners of the AFMA Best R&D Paper awards. These nine finalists presented their papers again to a panel of experts to compete for the Best Poster Awards in the morning of the same day.

The first prize for the Best Poster went to Remedios Villa Juan-Abgona and Leny Galvez of FIDA and Narceo Bajet of UPLB for their paper entitled; “Development and adoption of Rapid Immunofilter Paper Assay (RIPA) for detection of abaca viruses”. The second prize was awarded to a study entitled, “Recycling distillery effluent as liquid fertilizer for sugarcane” by Ma. Lourdes Sison, Fe Torres, Fidel Rey Nayve, Veronica Migo, William Fernandez, Elizabeth Bugante, and Jose Paulo Magbanua from UPLB-BIOTECH while the third prize was given to Marianito Doydora of DA-CENVIARC, Cesar Sevilla, Enrico Supangco, Federico Cruz, and Rita Laude of UPLB for their study, “Protein and isozyme polymorphism of beef cattle (Bos indicus) in Central Visayas”.

The national research symposium is held every year to recognize significant accomplishments in research and development and encourage the publication of research results by providing incentives for exemplary research performance. It is also one way of updating the reservoir of affordable cutting-edge technologies and information and encouraging...
Changing the landscape of agriculture with technology

Junelyn S. dela Rosa

Who could ever forget the emaciated Negros child of the 80s? He gave hunger a human form and brought home relevant issues like population explosion, dwindling resources, inflation and a lot more. Since then, the Negros child has retired but the scourge of hunger has persisted to this day perhaps even mutating to looming proportions.

A recent Social Weather Stations (SWS) survey reported that 15% of Filipinos do not have enough to eat. That means almost 13 million Filipinos go hungry everyday. Today, with the very high population rate and a declining per capita availability of land and water- that number will likely increase. This brings us to the pressing need of food security and the perennial question of how to achieve food security on a sustainable basis.

What is food security?

Food security, according to a World Bank definition, means access by all people at all times to sufficient food for active, healthy lives. Simply put, this means that each Filipino must be able to eat and buy nutritious food at all times. For a farmer, he must be able to produce enough food to meet all his family's needs and for a non-farmer, he must have a source of livelihood that affords him sufficient income so he could buy nutritious food for his family.

Coupled with the notion of food security is the country's ability to be food self-sufficient. Why should not the government exert more effort to make the country self-sufficient on rice and corn since they are the Filipinos' major staples.

To solve this problem, Dr. Emil Javier, President of the National Academy of Science and Technology (NAST) presented a roadmap to food security that he calls a "sustainable Philippine food system".

A sustainable Philippine food system

Dr. Javier said that a sustainable Philippine food system consists of sustainable agriculture and a set of strategies and approaches to create such a system. Dr. Javier discussed the concept of sustainable agriculture in the Philippine context by focusing on four major agroecological zones: intensively cropped lowlands, extensively cropped lowlands, natural forests and forest plantations, and fishponds and coastal areas.

The intensively cropped lowlands are those areas that are planted to rice, corn, other crops, vegetables and ornamentals and where commercial poultry and hogs are also raised. According to him, there is a need to implement integrated management schemes (i.e. nutrient, pest, water, and solid and waste) to ensure that the land's sustaining capacity can be maintained in the future.

On the other hand, extensively cropped lowlands are slope lands that are beyond 18%. Since these lands are more prone to soil erosion, he recommends that farmers adopt practices such as contouring, hedgerows, terracing, and integration of ruminant livestock to preserve the soil and increase the incomes of the farmers.

To protect natural forests and plantations, Dr. Javier said that there should be a logging ban in the remaining natural forests, social forestry and stewardship, and community management of protected areas as he recommends safe aquaculture practices, protection of mangroves and fish sanctuaries in fishponds and coastal areas.

Dr. Javier also outlined a feasible set of strategies and approaches to support a sustainable Philippine food system. These strategies are: democratic decentralization, agrarian reform, protected areas, supply chain, privatization, and cooperatives and contract farming.

Food security: Not an impossible dream

Today, one if not the foremost problem in the country is how to nutritiously feed everyone in the next decade or so. This is the concept of food security—feeding everyone with nutritious food, ensuring that everyone has money to buy nutritious food, and sustaining the
The Bureau of Agricultural Research (BAR) and Agricultural Training Institute (ATI) of the Department of Agriculture (DA) held the 1st Agriculture and Fisheries Tech Forum at the Fernando Lopez Hall, Bureau of Soils and Water Management (BSWM), Quezon City on 19 October 2004.

The forum, with the theme, "Yaman sa Agrikultura at Pangisdaan muli sa teknolohiya", presented technologies ready for adoption while selected farmers shared success stories. Three of the upcoming technologies were BAR-funded and these are: "Improved transport/shipment of lakatan, latundan, and saba bananas" by Dr. Perlita Nuevo of UP Los Baños (UPLB); 2) "Use of lime, compost, and Trichoderma in the control of club root disease of cabbage" by Dr. Virginia Cuevas of UPLB; and 3) "Protected cultivation of high-value vegetable using simple nutrient addition program (SNAP) in hydroponics for home commercial growers" by Dr. Primitivo Santos of UPLB. Another technology, "Multi-commodity solar tunnel," by Dr. Romualdo Martinez from the Bureau of Post Harvest and Extension (BPRE) was also featured.

Successful farmer-entrepreneurs and their stories of how DA-generated technologies enhanced their farming practices was the focus of the forum’s afternoon session. Ms. Eva Rose Pua of Delifresh Farm talked about organic chicken production while Mr. Luis T. Lina of MBL Farm gave a pep talk on ulang (giant freshwater prawn, Macrobrachium rosenbergii) culture and production.

Ms. Vilma Joston of Kababaihang Masigla ng Nueva Ecija gave a lecture on how her group produced and processed tilanggit (dried small tilapia). Mr. Joselito Tibayan, the Outstanding Farmer of the Year awardee from Naic, Cavite, related how year-round tomato production and multiple cropping of vegetables were able to send his children to school until college and help his community have a reliable source of livelihood.

This forum was organized to showcase success stories of enterprising farmers/fisherfolk; provide a venue to feature new and commercially-viable technologies that have been adopted and were found to be successful by farmers/fisherfolk; get feedback and potential impact of the featured technologies from its targeted clientele; and identify necessary research and extension interventions to facilitate effective utilization and dissemination of the developed technologies.

BAR Director William C. Medranon mentioned that the proceedings of the technoforum will be produced to supplement the activity and to serve as reference material. With the success of this activity, BAR and ATI plan to hold a series of similar technoforum in the future. (Likha C. Cuevas)

BAR Awards...from page 1

BAR Awards...from page 1

BAR, ATI hold first agri and fisheries tech forum

Agriculture organized this yearly symposium and facilitated the contest for the three kinds of awards: the AFMA R&D Paper Awards, the AFMA Best R&D Paper Awards, and the Best Poster Awards. (Junelyn S. de la Rosa)

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environment at the same time. Dr. Javier’s proposed sustainable Philippine food system expounds this concept and presents a tangible roadmap on how to achieve food security. By following this roadmap, we can start or initiate a “doubly green revolution”, a revolution that is more productive in terms of conserving natural resources and the environment-a timely revolution that can feed each Filipino and attain the country’s dream of food security. (Junelyn S. de la Rosa)

The Bureau of Agricultural Research (BAR), in cooperation with the Corn RDE Network and the GMA Corn Program, implements the Expanded Corn Technology Showcase Program (ECTSP) to help farmers adopt and utilize available technologies. The program was implemented in partnership with the regional State Colleges and Universities (SCUs), 16 Regional Integrated Agricultural Research Centers (RIARCs), Regional GMA Corn Office, Agricultural Training Institute (ATI), Provincial Research Offices, LGUs, and private seed and fertilizer companies.

The program demonstrated the performance of recently developed corn varieties both by private and public sector in DA research stations and in farmers' fields and the latest cutting-edge technologies on integrated corn crop management. Two strategies are being utilized in implementing this technoshowcase program: through the DA research stations (on-station) and under actual farmers' field conditions (on-farm).

Expected outputs of this program include: list of recommended yellow and white corn varieties for each regions/agroenvironment; generation of more jobs for the collaborating institutions and farmers in the community; increased and sustained corn productivity and income of farmers; reduced corn production cost; enhanced skills of the farmers on seed quality production and maintenance; and participatory research development and extension (RDE) undertaking among research centers/institutions, LGUs, farmer organizations, and private institutions.

From April to September 2003 wet season cropping, there were ten sites for the on-station ECTSP with 29.7 hectares and 31 sites for the on-farm ECTSP with 242.1 hectares and 217 farmer-beneficiaries. Yellow corn yield ranged from 5.7 t/ha to 10.89 t/ha while white corn yield ranged from 6.59 to 7.79 t/ha.

For October 2003 to March 2004 dry season cropping, there were 17 sites for the on-station ECTSP with 27.7 ha and 52 sites for the on-farm ECTSP with 202.03 ha and 264 farmer-beneficiaries. Yellow corn yield ranged from 4.2 t/ha to 10.89 t/ha while white corn yield ranged from 3.99 to 8.16 t/ha.

BAR, GMA corn program, LGUs, private seed companies, fertilizer companies, and farmer-partners all contributed in the cost of implementing the project. (National Corn RDE Network press release)

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Coconut methyl ester (CME) as petrodiesel quality enhancer
The group of Engr. Roberto C. Ables of the Philippine Coconut Authority (PCA) explored the viability of coconut methyl ester (CME) as petrodiesel quality enhancer to reduce air pollution and improve engine performance in vehicles. Test results showed a reduction of around 50% on their smoke emissions.

Development of quality criteria for cultured Carrageenophytes
The project team, headed by Dr. Nemesio Montañño of UP-MSI, determined the effect of seaweed culture age on the yield, chemistry, and rheology of Carrageenophytes. The Philippine seaweed industry has come a long way since its first export venture in the 70s, thus, it's one of the world's leaders in the production of carrageenan-producing seaweeds. This technology helps farmers and raisers identify appropriate time to harvest cultured Carrageenophytes and help them produce quality seaweeds.

Ocean color for sustainable fisheries
This important technology provides baseline data on marine resources, habitat size, and insights on the diversity of a given area. It is beneficial in determining areas with high economic potential through remote sensing and LANDSTAT image of identified coral areas.

Updates on the culture of commercially important echinoderms and gastropods
Dr. Marie Antonette Meñez of UP-MSI discussed the high mariculture potential of our local species and the progress in development of invertebrate culture and stock enhancement particularly on abalone, sea cucumber, sea urchin, and top shell. Through this technology—reseeding and community-based grow-out culture of hatchery-reared seedstock—the recovery of the depleted stocks is enhanced.

Diagnostic test kit for plant pathogens and food-feed pathogens
This technology creates awareness on the importance of indexing to minimize spread of diseases of economically important crops like the banana bunchy top virus (BBTV), banana mosaic virus (BMV), and banana bract mosaic virus. Headed by Dr. Teresita Espino of BIOTECH, the technology also helps in the detection of monoclonal antibodies for different plant pathogens.

Virgin coconut oil (VCO) production
Dr. Espino reveals some amazing facts about VCO particularly its health benefits. She explained the technology used by BIOTECH in processing VCO and how it differs with that by other VCO-producing companies.

Attending the Investors' Forum were members of the Farmers and Industry Advisory Council (FIAC), representatives from the Philippine Chamber of Commerce & Industry (PCCI), Bureau of Fisheries and Aquatic Resources (BFAR), media, and business sector. (Rita T. dela Cruz)
First investors' forum highlights 11 matured technologies

The Bureau of Agricultural Research (BAR) in coordination with the Agricultural training Institute (ATI) held the first Investors' Forum to showcase 11 R&D technologies ready for commercialization that our farmers and entrepreneurs can immediately adopt either as livelihood or business enterprise. The activity held on 5 October 2004 at BSWM Convention Hall, Quezon City was part of the National Agriculture and Fisheries R&D Week, which is being celebrated every first week of October.

The technology forum aimed to create awareness among various stakeholders in agriculture and fisheries sectors that there are new technologies and information that are ready for dissemination and commercialization. It encouraged the building of alliances among technology generators, extension service providers and the various end-users of the technologies. The valuable information and feedback from both the presenters and participants of this techno forum are useful in identifying further research and extension interventions.

Among the promising technologies presented during the forum are: 1) improved production technology for commercialization of potted flowering Mussaendas, 2) new mango realities, 3) virus-free and true-to-type planting materials for garlic, 4) vaccine against Newcastle disease in upgraded native chicken, 5) silica gel from rice hull, 6) potential of coconut as petroleum diesel fuel, 7) cultured Carrageenophyta, 8) ocean color for sustainable fisheries, 9) culture of abalone, sea cucumber and other commercially important invertebrates, 10) diagnostic test kit for plant pathogens and feed toxins and, 11) virgin coconut oil.

Improved production technology for commercialization of potted flowering Mussaendas
With this technology developed by lead scientist, Primitivo Jose Santos of IPB, gardeners can now grow Mussaenda any time of the year by inducing flowering stage even during off-seasons.

New mango realities
Dr. Roberto Coronel of UPLB presented insights about mango and how to improve the size with technologies such as fruit thinning, fertilization and irrigation, selecting strains, and diversifying mango cultivars.

Virus-free and true-to-type planting materials for garlic
A group of scientists headed by Dr. Lilian Pateña of the Institute of Plant Breeding (IPB) developed a technology for producing certified clean garlic bulbs to solve the problem of low quality-planting materials resulting to low yield in garlic. This technology could help farmers and the whole garlic industry to obtain and mass-produce clean planting materials and eventually increase their yield.

Newcastle disease prevention and control program for upgraded native chicken
Scientists from the Central Visayas Integrated Agricultural Research Center (CENVIARC) developed a new vaccine to control (if not eradicate) the occurrence of Newcastle disease (ND) in native chicken. Newcastle is a highly infectious viral disease that affects poultry and other birds, attacking mostly the lungs and the nervous system. According to Dr. Rachel B. Cadelina, lead scientist for this project, the newly developed ND vaccine was proven to reduce the incidence of this disease thereby increasing farmers' productivity and profitability. Moreover, the ND vaccine is cheaper than the commercially prepared vaccine available now in the market.

Silica gel from rice hull
The group of Dr. Leni Quirit of the University of the Philippines-Natural Sciences Research Institute (UP-NSRI) found some innovative use for rice hull, which is regarded as an agricultural waste. They found that rice hull can be used both as energy source and as silica gel component. Rice hull silica gel has properties comparable to the commercial silica gel and with the new technology developed, this agricultural waste can be turned into a useable resource for the country.

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Aiming for long-term food security by tapping a limited resource? It almost sounds futile. But a University of the Philippines Los Baños professor said that the degradation of the sprawling biodiversity around can be stalled, while securing the source of food for future generations. Dr. Ben Malayang said that it only takes for us make the right choices. Dr. Malayang presented his paper, “Biodiversity, Environment, & Food Security: Choices & Imperatives in the Philippines,” at the Symposium on Food Security and Biodiversity in celebration of the World Food Day at the BSWM, October 18, 2004.

He first established life as a phenomenon, where organisms depend on a wider diversity of living things for subsistence and existence. This idea set the tone for the rest of Dr. Malayang’s idea on food security and biodiversity conservation, which he mainly on how humans—the higher life forms—deal with the ensuing environmental degradation from centuries of human dependence on biodiversity to produce food. Dr. Malayang presented options, which he said would entail effects on our efforts to reconcile the biodiversity conservation and food security for the coming generations.

Mining or biodiversity?

The Philippines, he said, is blessed with two things that are both a blessing and a curse. First, is that the archipelagic nature of our country and our location in the humid tropics have blessed us with a biodiversity that ranks seventh in the world. The country’s 7,100 or so islands are repositories of life forms that are both sources of food and medicine. Second, is that the country sits on three converging major geologic plates—the Pacific Plate, the Indo-Australian Plate, and the Euro-Asian Plate. This means that our country is mega-mineralized of both metallic and non-metallic resources. This gives tremendous value in terms of export earning potentials.

Our options are between the “treasures that glitter with green-bucks (dollar)” or the “greens that glitter with life”. The first are gems that have high commercial value and therefore can bring home the money, while the second are gems that glitter with life. Dr. Malayang made it clear that the option is not limited to mining per se, and that mining also represents other land resources.

Modernization: To improve, or weaken the agri and biodiversity link?

There are Philippines laws that promote and support agricultural modernization. But the notion of modernizing agriculture, according to Dr. Malayang, has come off to some as “removing the link of productivity to the traditional genetic base”. The law to modernize agriculture, in the first place, was based on the need to lessen the practice of “traditional” Philippines agriculture—traditional meaning high dependence on the local biodiversity around us. Science and modern technology have proven itself throughout the world that indeed they help boost agricultural productivity.

Dr. Malayang discussed the possibility of applying science and technology toward improving the link of agriculture and Philippine biodiversity. He said that having advanced science for higher productivity does not necessarily mean veering away from using the local biodiversity base to produce food. The notion of agricultural modernization as reason for farmers to be less dependent on our biodiversity and traditional practices does not support our ultimate goal of food security in the long term.

He gave us two options: a) to use science and technology to lessen the farmers’ degree of dependence on local biodiversity or b) to use the same tools of science to improve how much Philippine agriculture is able to derive from Philippine biodiversity?

Indigenous or endogenous food security?

How does the Philippines plan on securing food for the future? Is it by way of improving domestic capacities to procure food from elsewhere, or to improve our ability to produce our own food?

The first scenario is, if food security is based on procuring food would biodiversity play a back seat role in resource development, and let immediate earnings be in the forefront? The second case is, if food security is based on our own capacity to produce food will our local biodiversity be a major source of genetic materials that help boost agricultural productivity.

If, however, we procure food both by procuring and producing it, the role of biodiversity should be gingerly balanced wherein serving one does not curtail the other.

Dr. Malayang said that in the end, our choices on how we are to address the needs of a growing population, and the protection of an endangered biodiversity, will spell the difference in effectively ensuring food security for future generations. This can be achieved through sustainable and environmentally policies of the Philippine government. (Ma. Lizbeth J. Baroña)
Experts discuss food security in World Food Day celebration

"expanding agricultural productivity to meet food needs in the face of an increasing competition for our natural resources and declining soil fertility could be a real challenge for us." Usec. Drilon stressed that maintaining a diversity of both our flora and fauna is the key to survival for millions of our small farmers worldwide.

The symposium included presentations from National Academy of Science and Technology. Vice President, Emil Q. Javier entitled "Sustainable Food Production for the Filipino People", followed by University of the Philippines Los Baños professor Ben Malayang Jr.'s paper entitled "Role of Biodiversity in Food Security and Environmental Protection/Integrity", and finally, International Network for the Improvement of Banana and Plantain (INIBAP) Asia-Pacific Regional Coordinator, Dr. Agustin Molina's paper, "The Use of Biodiversity for Sustainable Pest and Diseases Management Toward Food Security and Healthy Environment.

Discussants for Dr. Javier's paper were Dr. Cristina David of the Philippines Institute for Developmental Studies (PIDS), and Dr. Francis Lucas representing the NGOs United Nations Development Programme (UNDP) Program Manager of Environment, Ms. Clarissa Arida discussed Dr. Malayang's paper; and Dr. Molina's paper was discussed by UPLB Department of Entomology chairman, Dr. Rey Luis Velasco, and UPLB Department of Plant Pathology chairman, Dr. Marina Natural. (Ma. Lizbeth J. Barona)

RIARCs establish common framework for corn RDE

The GMA Corn Program, through the Bureau of Agricultural Research (BAR) and the National Corn RDE Network, sponsored a review and planning workshop on Corn RDE agenda and programs held 6-7 October 2004 at the Agricultural Systems Cluster (ACS), UP Los Baños, College, Laguna. Sixteen Regional Integrated Agricultural Research Centers (RIARCs) participated in the activity.

The workshop aimed to establish a common understanding and framework in the implementation of the midstream and downstream corn RDE programs among the RIARCs. Participants presented the corn industry status in each region, the RDE issues and concerns, and the list of new, ongoing, and completed corn RDE programs and projects. Dr. Artemio M. Salazar and Dr. Romeo V. Labios, corn RDE team leader and project coordinator, respectively, served as evaluators.

"We already have the initiatives on how to continuously increase corn productivity and protect the interest of the farmers through the National Corn RDE Network. Holding a techno showcase is one of the strategies to encourage farmers to adopt new technologies," Dr. Salazar said. He also encouraged the participants to work with other DA agencies and the private sector for them to have a clear and concrete idea on how to implement different projects and promote technologies to the farmers.

Resource speakers from UPLB were invited to discuss topics that could help the RIARCs in conducting researches. Dr. Connie Reaño, professor of the Institute of Statistics, discussed statistical methods in agricultural research, particularly in conducting on-farm research and corn techno showcase.

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Dr. Keiji Kainuma, member of the CGIAR Science Council of the Consultative Group of International Agricultural Research (CGIAR) Centers visited the Bureau of Agricultural Research (BAR) as part of his five-day visit to the Philippines. He was received by BAR Director William C. Medrano and Grant Development and International Cooperation-Project Development Unit (GDIC-PDU) Head Victoriano B. Guiam, 13 October 2004, RDMIC Conference Room.

The purpose of his visit is to touch-base with funding agencies and donors for possible support to CGIAR. Dr. Kainuma, a Japanese, is one of the 10 members of the CGIAR Science Council, which acts as adviser for CGIAR Centers, members, and stakeholders. The Council identifies research priorities, strategies, and related issues such as new technologies and policies to help poor farmers in developing countries manage their resources for higher productivity and income.

During his visit to the Philippines, Dr. Kainuma met with Dr. Ronald Cantrell, director general of the International Rice Research Institute (IRRI). IRRI is one of the 16 international agricultural centers under CGIAR. He also visited the Asian Development Bank (ADB), the Department of Agriculture (DA), and BAR as his last stop.

Aside from being a member of the CGIAR SC, Dr. Kainuma is also senior advisor at the Ministry of Agriculture, Forestry and Fisheries and executive research advisor at the National Food Research Institute, both in Japan. Accompanying him during the visit were: Dr. Emi Kainuma of the Japan International Cooperation Center and Dr. Betty del Rosario of the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD). (Rita T. dela Cruz)

(L-R) Dr. Emi Kainuma of the Japan International Cooperation Center, Dr. Keiji Kainuma of the CGIAR Science Council, Dr. William Medrano and Dr. Santiago Obien of BAR, and Dr. Betty del Rosario of PCARRD

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To answer questions on soil fertilization, Dr. Henry Samonte, adjunct professor of the Department of Soil Science, discussed the output of their project entitled, “Stratification of nutritional problems and their solutions for high yield in major soil types grown to corn”. He distributed handouts on recommended lime and fertilizer rate given a soil fertilizer requirement. He also presented a proposal on soil calibration test for precision fertilization. Soil calibration is to be conducted in all regions involving the RIARCs, Samonte said. Through this, the capability of the regions in providing appropriate fertilizer recommendation given a certain soil environment and soil fertility condition would improve.

Dr. Apolonio Ocampo presented techniques on how to easily compute the precise amount of fertilizer application given the recommended fertilization rate. Participants were also provided with materials on fertilizer computation.

At the end of the session, the participants presented their plan of activities for the techno showcase. Dr. Labios provided the synthesis of their presentations. “We have to demonstrate the best technology results, conduct new researches based on needed technologies, and create effective ways of promoting these to the farmers,” Labios concluded.

This activity is part of the project, “Systematic Coordination of the On-station and On-farm Corn RDE Programs in the Philippines” with fund support from BAR and the National Corn RDE Network. (Likha C. Cuevas and National Corn RDE Network press release)